

REMARKS

Claims 1-11 are pending in this application. By this Amendment, claim 1 is amended. No new matter is added. Support for this Amendment can be found at, for example, Fig. 1 and page 12, lines 7-19. Reconsideration and prompt allowance of the application based on the above amendments and the following remarks is respectfully requested.

I. Rejections Under §102(b)

The Office Action rejects claims 1-8 and 11 under 35 U.S.C. §102(b) as being anticipated by U.S. Patent No. 6,394,417 to Browne et al. (hereinafter "Browne"). The rejection is respectfully traversed.

Browne does not disclose "the diaphragm valve element is made of resin," as recited in independent claim 1. Specifically, the Examiner asserts that Browne discloses a diaphragm valve element (E). However, Browne's diaphragm valve element (E) is not the equivalent to the recited "diaphragm valve element" because the recited "diaphragm valve element is made of resin" and Browne makes no reference to the material of its diaphragm valve element (E). Thus, Browne does not disclose "the diaphragm valve element is made of resin," as recited in independent claim 1.

Browne also does not disclose "the main body including a lower plane surface for being in contact with the valve seat," as recited in independent claim 1. Specifically, the Examiner asserts that Browne discloses a main body (G) which is to be brought into/out of contact with the valve seat (324). However, Browne's main body (G) is not the equivalent to the recited "main body including a lower plane surface" because Browne's main body (G) does not have a lower plane surface being in contact with the valve seat. In Browne, Figs. 13 and 14 disclose both the main body (G) and the valve seat (324); however, there is no indication or reference to the main body including a lower surface that is in contact with the

valve seat. Thus, Browne does not disclose "the main body including a lower plane surface for being in contact with the valve seat," as recited in independent claim 1.

Browne also does not disclose "a side surface vertically extending from an outer periphery of the lower plane surface," as recited in independent claim 1. Specifically, the Examiner asserts that Browne discloses a main body (G) which is to be brought into/out of contact with the valve seat (324). However, Browne's main body (G) is not the equivalent to the recited "side surface vertically extending from an outer periphery of the lower plane surface" because Browne's main body (G) discloses a side surface which is concave-shaped (Fig. 14) and thus, does not extend vertically. When Browne's concave-shaped valve element is made of resin (as recited in claim 1), a contact portion between the valve element and the valve seat becomes thinner and the valve element fails to press firmly against the valve seat, resulting in a sealing force that is insufficient and causes leakage. The recited "side surface vertically extending from an outer periphery of the lower plane surface," however, allows the resin valve element to be firmly pressed against the valve seat ensuring sufficient sealing force (page 3, line 13 to page 4, line 1). Thus, Browne does not disclose "a side surface vertically extending from an outer periphery of the lower plane surface," as recited in independent claim 1.

Applicants do not concede that Browne discloses the features of dependent claims 2-8 and 11. However, it is unnecessary to separately discuss the features recited in the dependent claims given the existence of clear and distinct features in independent claim 1.

Accordingly, Applicants respectfully request withdrawal of the rejection.

II. Rejection Under §103(a)

The Office Action rejects claims 1-7 and 9-11 under 35 U.S.C. §103(a) as being obvious over U.S. Patent No. 3,407,845 to Cooksley in view of U.S. Patent No. 4,180,236 to

Saarem et al. (hereinafter "Saarem") and further in view of Browne. The rejection is respectfully traversed.

Cooksley does not teach or suggest "the main body including a lower plane surface for being in contact with the valve seat," as recited in independent claim 1. Specifically, the Examiner asserts that Cooksley teaches or suggests a main body which is to be brought into/out of contact with the valve seat (17) (Fig. 1). However, the main body (18, 20) is not equivalent to the recited "lower plane surface for being in contact with the valve seat." As is disclosed in Fig. 1 of Cooksley, the valve seat is in contact with the side portion of the main body, not a lower plane surface. Thus, Cooksley does not teach or suggest "the main body including a lower plane surface for being in contact with the valve seat," as recited in independent claim 1.

Cooksley also does not teach or suggest "a side surface vertically extending from an outer periphery of the lower plane surface," as recited in independent claim 1. Specifically, the Examiner asserts that Cooksley teaches or suggests a main body (18, 20) which is to be brought into/out of contact with the valve seat (17) (Fig. 1). However, the main body (18, 20) is not equivalent to the recited "a side surface vertically extending from an outer periphery of the lower plane surface." As is disclosed in Fig. 1 of Cooksley, the side surface of the main body slopes upward from the lower to the upper surface, not vertically. Thus, Cooksley does not teach or suggest "a side surface vertically extending from an outer periphery of the lower plane surface," as recited in independent claim 1.

Cooksley also does not teach or suggest "a slope portion connecting an upper end of the side surface and an outer periphery of the upper surface," as recited in independent claim 1. Specifically, the Examiner asserts that Cooksley teaches or suggests a main body (18, 20) which is to be brought into/out of contact with the valve seat (17) (Fig. 1). However, the main body (18, 20) is not equivalent to the recited "a slope portion." As is disclosed in

Fig. 1 of Cooksley, there is no slope portion connecting an upper end of the side surface and an outer periphery of the upper surface. Instead, such a surface in Cooksley is vertical. Thus, Cooksley does not teach or suggest "a slope portion connecting an upper end of the side surface and an outer periphery of the upper surface," as recited in independent claim 1.

Saarem does not teach or suggest "the main body including a lower plane surface for being in contact with the valve seat, a side surface vertically extending from an outer periphery of the lower plane surface, a hole opening on an upper surface in which the actuator is fitted, and a slope portion connecting an upper end of the side surface and an outer periphery of the upper surface," as recited in independent claim 1. The Examiner relies on Saarem to teach or suggest a normally-open and a normally-closed valve. However, Saarem fails to disclose a diaphragm valve element comprising a main body. Thus, Saarem does not teach or suggest "the main body including a lower plane surface for being in contact with the valve seat, a side surface vertically extending from an outer periphery of the lower plane surface, a hole opening on an upper surface in which the actuator is fitted, and a slope portion connecting an upper end of the side surface and an outer periphery of the upper surface," as recited in independent claim 1.

Additionally, Browne fails to teach or suggest the features of independent claim 1 as discussed above.

Applicants do not concede that either Cooksley, Saarem or Browne teach or suggest the features of dependent claims 2-7 and 9-11. However, it is unnecessary to separately discuss the features recited in the dependent claims given the existence of clear and distinct features in independent claim 1.

Accordingly, the applied references, alone or in combination, do not teach or suggest all of the features recited in claims 1-7 and 9-11. Therefore, Applicants respectfully request withdrawal of the rejection.

III. Conclusion

In view of the foregoing, it is respectfully submitted that this application is in condition for allowance. Favorable reconsideration and prompt allowance of the claims are earnestly solicited.

Should the Examiner believe that anything further would be desirable in order to place this application in even better condition for allowance, the Examiner is invited to contact the undersigned at the telephone number set forth below.

Respectfully submitted,



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